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R.I.P.U.C. Workshop

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Agenda

Progression of Estimate to Actuals

How DG Estimates are Created

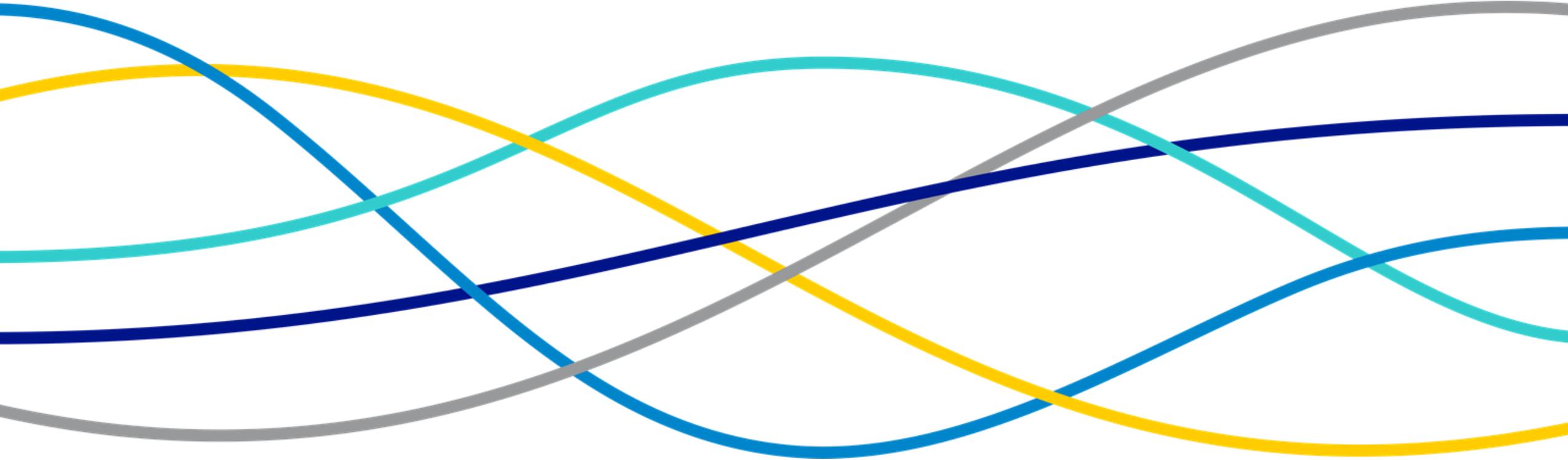
Overview of Utility Accounting

Question & Answer

Progression of Estimate to Actuals



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Progression of Estimate to Actuals

- Customer Energy Integration (CEI), consultant receives final Distribution System Impact Study (DSIS), from DPAM (Distribution Planning & Asset Management)
 - DSIS contains all system modifications and preliminary costs, at both the distribution and substation distribution level
- CEI consultant will forward the DSIS report to the customer, per R.I.P.U.C. No. 2244, the customer will have 15 business days to review the report and decide whether or not to proceed with ISA (Interconnection Service Agreement)
 - If the customer agrees to an ISA, the CEI consultant will use the DSIS cost estimate in conjunction with the invoicing calculator to ultimately determine the customers cost impact, as well as their payment terms
 - Detailed costs of system modifications will be provided in attachment 3 of the ISA, as well as the associated tax gross up adder on capital costs
 - Upon receipt of the ISA, the customer will have 15 business days to review and execute the agreement
- In order to proceed with design work, the customer will be responsible for providing a 25% payment (based on the payment terms that are established in the ISA)
 - In order for construction to proceed, the customer will have to make a 75% payment (again, based on the payment terms that are established in the ISA)

Progression of Estimate to Actuals (Continued)

- Once construction has been completed and the project has been interconnected, the Project Management team will start their formal closeout process
 - Once the associated project work orders have been closed out, the final reconciliation process will then commence
 - At this point in time, we will populate actual costs that were associated with interconnection of the project
- Once the reconciliation has been completed and all actual costs have been generated, the CEI consultant will begin drafting the FAR (Final Accounting Report), to outline all associated project costs and payments received
- Once the customer has received their FAR, the company will then proceed with preparing the final bill, where the customer will ultimately receive either a refund or invoice, depending on actuals that were populated at the study and distribution level

Invoicing Calculator



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National Grid Work Item	Conceptual Cost +/-25% Planning Grade Cost Estimate not including Tax Liability				Associated Tax Liability Applied to Capital	Total Customer Costs includes Tax Liability on Capital Portion
	Pre-Tax Total \$	Capital	O&M	Removal	11.08%	Total \$
System Modifications Narragansett Electric Co. (Distribution)						
Facility Specific POI/PCC Work	\$0.00				\$0.00	\$0.00
Common POI/PCC Work	\$0.00				\$0.00	\$0.00
Facility Specific Distribution Feeder Modifications 1	\$0.00				\$0.00	\$0.00
Facility Specific Distribution Feeder Modifications 2	\$0.00				\$0.00	\$0.00
Common Distribution Feeder Modifications 1	\$0.00				\$0.00	\$0.00
Common Distribution Feeder Modifications 2	\$0.00				\$0.00	\$0.00
Protective Device Setting Changes	\$0.00				\$0.00	\$0.00
Facility Specific Substation Modifications	\$0.00				\$0.00	\$0.00
Common Substation Modifications 1	\$0.00				\$0.00	\$0.00
Common Substation Modifications 2	\$0.00				\$0.00	\$0.00
EMS Integration	\$0.00				\$0.00	\$0.00
SUBTOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
System Modifications Narragansett Electric Co. (Transmission)						
	Pre-Tax Total \$	Capital	O&M	Removal	9.69%	Total \$
Facility Specific Substation Modifications	\$0.00				\$0.00	\$0.00
Common Substation Modifications	\$0.00				\$0.00	\$0.00
SUBTOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Interconnecting Customer Interconnection Facilities ("ICIF")						
	Pre-Tax Total \$	Capital	O&M	Removal	11.08%	Total \$
Witness Testing	\$0.00				\$0.00	\$0.00
SUBTOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00



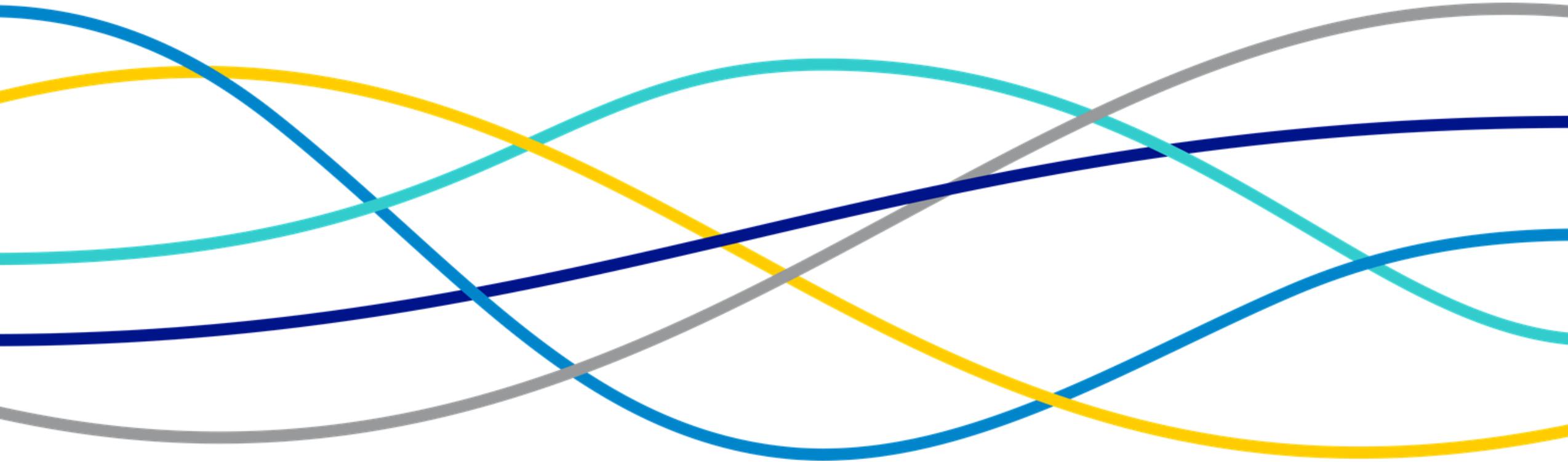
Invoicing Calculator Cont.

- The invoicing calculator tool is used to further breakdown costs and determine the payment schedule using the cost estimate provided in the DSIS
 - It especially helps with projects that have cost sharing, and breaks down the cost per project
- Some circumstances that cause the total in the Invoicing Calculator (and consequently the Interconnection Service Agreement) to differ from the estimate provided in the DSIS
 - Tax Rates
 - There are instances in which the tax rates included in the DSIS are not accurate and needs to be updated when completing the Invoicing Calculator
 - When cost sharing is involved the tax rates differ because the calculations for those upgrades need to be based off of the tax rate that was in effect at the time the trigger project's ISA was executed
 - Cost sharing
 - Cost sharing costs are not reflected in the DSIS
 - Cost shared amounts are determined when completing the Invoicing Calculator

How DG Estimates are Created



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Estimate Development

- Estimates are developed by DPAM (Distribution Planning & Asset Management)
 - Desktop estimating
 - Geographic Information System (GIS) electric system representation is reviewed
 - Draft routes are developed
 - available overhead routes are checked first
 - underground routes are considered if necessary
 - Unitized estimates are used
 - per mile, per foot
 - examples
 - 1mile overhead conductor - \$1M/mile
 - 1 foot underground cable system - \$500 to \$1000/foot (\$3m to \$6M per mile)
 - per device
 - examples
 - recloser - \$80k
 - capacitor - \$40k
 - Unitized estimates informally based on recently completed work
 - Field review
 - If possible, a field review is conducted with Operations and other design resources
 - Interconnection timelines make field reviews difficult or 'rushed'

Estimate Development - Examples



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Substation					
Title	Description	Capex	Opex	Removal	Total
Install: 115/13.8 kV 55 MVA Transformer	Install one (1) 115/13.8 kV 55 MVA transformer, circuit switcher, airbreak switch, all associated conductor, grounding, conduits, structures, site work, protection equipment, etc.	\$5,150,000	\$0	\$0	\$5,150,000
Install: 3V0 Protection	Install three (3) 115 kV CCVTs and associated foundations, structures, conduit, etc. Install 59N relay in existing control house panel	\$655,000	\$0	\$0	\$655,000

D-Line Estimates					
Title	Description	Capex	Opex	Removal	Total
Reconductor: 1/0 Al Bare Primary 25% Poles	Install/remove One (1) Mile of open wire 1/0 Al Bare primary, crossarm construction, with 25% pole replacements and transfer associated equipment and secondary/neutral	\$610,000	\$70,000	\$80,000	\$760,000
Reconductor: 1/0 OW to 477 Spacer 100% Poles	Install one (1) mile spacer construction with 100% pole replacements and remove one (1) mile 1/0 open wire bare construction and transfer associated equip.	\$915,000	\$75,000	\$120,000	\$1,110,000

DG POI/PCC Estimates					
Title	Description	Capex	Opex	Removal	Total
Select...					
OH POI/PCC 15 kV	160' 3-1/0 Al, 4 poles, 15 kV recloser, 15 kV loadbreak, 15 kV primary meter, and associated equip.	\$195,000		\$0	\$195,000
OH POI/PCC 35 kV	160' 3-1/0 Al, 4 poles, 35 kV recloser, 35 kV loadbreak, 35 kV primary meter, and associated equip.	\$225,000		\$0	\$225,000



Estimate/Scope Handoff

- Estimates/Scopes are handed to Design
 - Scope is designed in a GIS system and work management system
 - Nut and bolt level design
 - Design adjusted for clearances and asset condition not identified initially
 - Easements and proper rights determined/obtained
 - Environmental and Municipal permits determined/obtained
 - Traffic protection determined
 - Underground systems – repaving details determined
- Design package handed to Operations / Project Management for execution
 - Actual costs can be impacted by repeated mobilization and demobilization
 - Weather
 - Emergencies/Outages
 - Other work

Red items are often
greatest impact to
original estimates



Detailed Estimate Example - Recloser

		CAPEX
Craft Labor		5,000
Materials (Recloser)		30,000
Engineering Cost		450
Contractors/Consultants		4,000
Project Management Cost		300
Craft Supervision		800
Subtotal Direct Cost		40,550
Overheads		
Material Handling %	13%	3,900
Labor Adders %	95%	6,222
Capital Overhead %	22%	1,440
A&G %	5%	2,533
Equipment Tax %		
Contingency %		
AFUDC %		
Totals		54,645

Company
Labor = \$6,550

Overview of Utility Accounting



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Overview of Utility Accounting

Cost Type Detail



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UNIFORM SYSTEM OF ACCOUNTS	
<i>Electric Plant Instructions</i>	
1. Classification of electric plant at effective date of system of accounts (Major)	3.16 Taxes
2. Electric plant to be recorded at cost	3.17 Allowance for funds used during construction
3. Components of construction cost	3.18 Earnings and expenses during construction
3.1 Contract work	3.19 Training costs
3.2 Labor	3.20 Studies
3.3 Materials and supplies	3.21 Asset retirement costs
3.4 Transportation	4. Overhead construction costs
3.5 Special machine service	5. Electric plant purchased or sold
3.6 Shop service	6. Expenditures on leased property
3.7 Protection	7. Land and land rights
3.8 Injuries and damages	8. Structures and improvements
3.9 Privileges and permits	9. Equipment
3.10 Rents	10. Additions and retirements of electric plant
3.11 Engineering and supervision	11. Work order and property record system required
3.12 General administration capitalized	12. Transfers of property
3.13 Engineering services	13. Common utility plant
3.14 Insurance	14. Transmission and distribution plant
3.15 Law expenditures	15. Hydraulic production plant (Major)
	16. Nuclear fuel records required (Major)

- Accounts highlighted are the costs often found in the Final Accounting Report
- Per FERC reporting, it is essential that utility companies have a significant level of detailed information regarding costs associated with its plants to facility management and control of assets
- Purpose of extensive requirements prescribed for accounting for electric plant is the regulation of utility plants. Major component of rate base is the original cost of its plant in service less accumulated depreciation. Therefore, the accounting for electric plant has a direct bearing on the establishment of a regulated utility's rates

Overview of Utility Accounting

Capital Investment Lifecycle

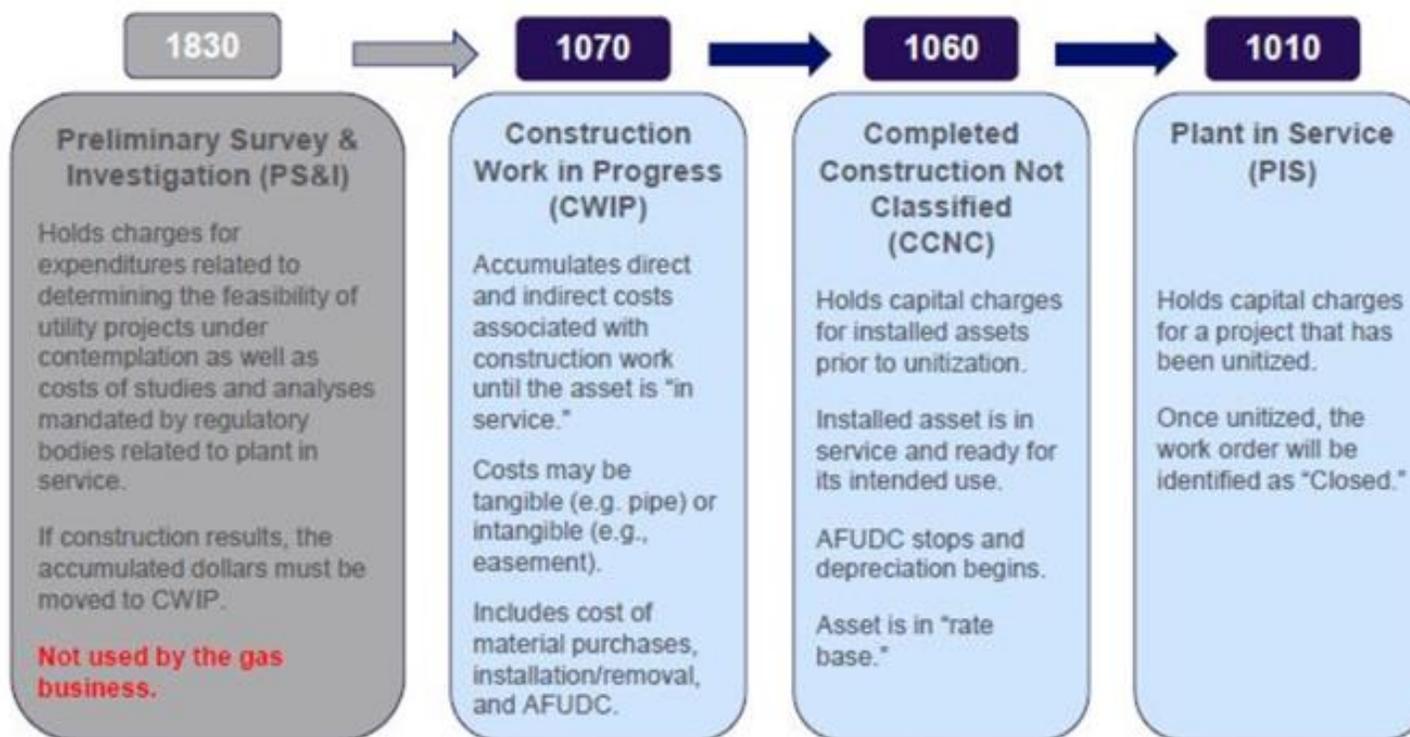


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Capital General Ledger (G/L) Accounts

As a work order progresses through its lifecycle, capital costs are captured in different G/L Accounts.



Overview of Utility Accounting

Capital Investment Lifecycle



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- Initial measurement - Costs incurred during the construction of an asset that are directly attributable to its construction should be capitalized
- Preliminary phase (PS&I) - The preliminary phase occurs before construction of the project is probable
- Construction phase (CWIP) - During the construction phase, a reporting entity should capitalize direct and incremental costs of construction in accordance with its capitalization policies
 - Costs (Labor, Contract Work, Materials, etc.) are incurred against specific work orders
 - Employees directly charge the work order via work management system
 - Contract work directly charged against specific work order
 - Materials can be directly purchased and charged to work order and/or allocated via Inventory Management Warehouse Management (IMWM)
 - Utilities and power companies may receive amounts known as contributions in aid of construction (CIAC) that are generally intended to defray all or a portion of the costs of building or extending existing facilities. CIAC is a permanent contribution and in practice, electric and gas utilities record CIAC received as a reduction of the cost basis of plant. This concept is consistent with the Federal Energy Regulatory Commission's accounting requirements and with a regulated utility's ratemaking treatment, because rate base is generally determined net of CIAC received
- Plant In-Service & Depreciation - Date on which a plant is considered ready for its intended use is often referred to as the commercial operation date (COD) or the placed-in-service date. Plant accounting requires adoption of a method of depreciation and estimation of the useful lives and related salvage values of the assets to be depreciated. An estimate of useful life not only considers the economic life of the asset, but also the remaining life of the asset to the reporting entity



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